Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

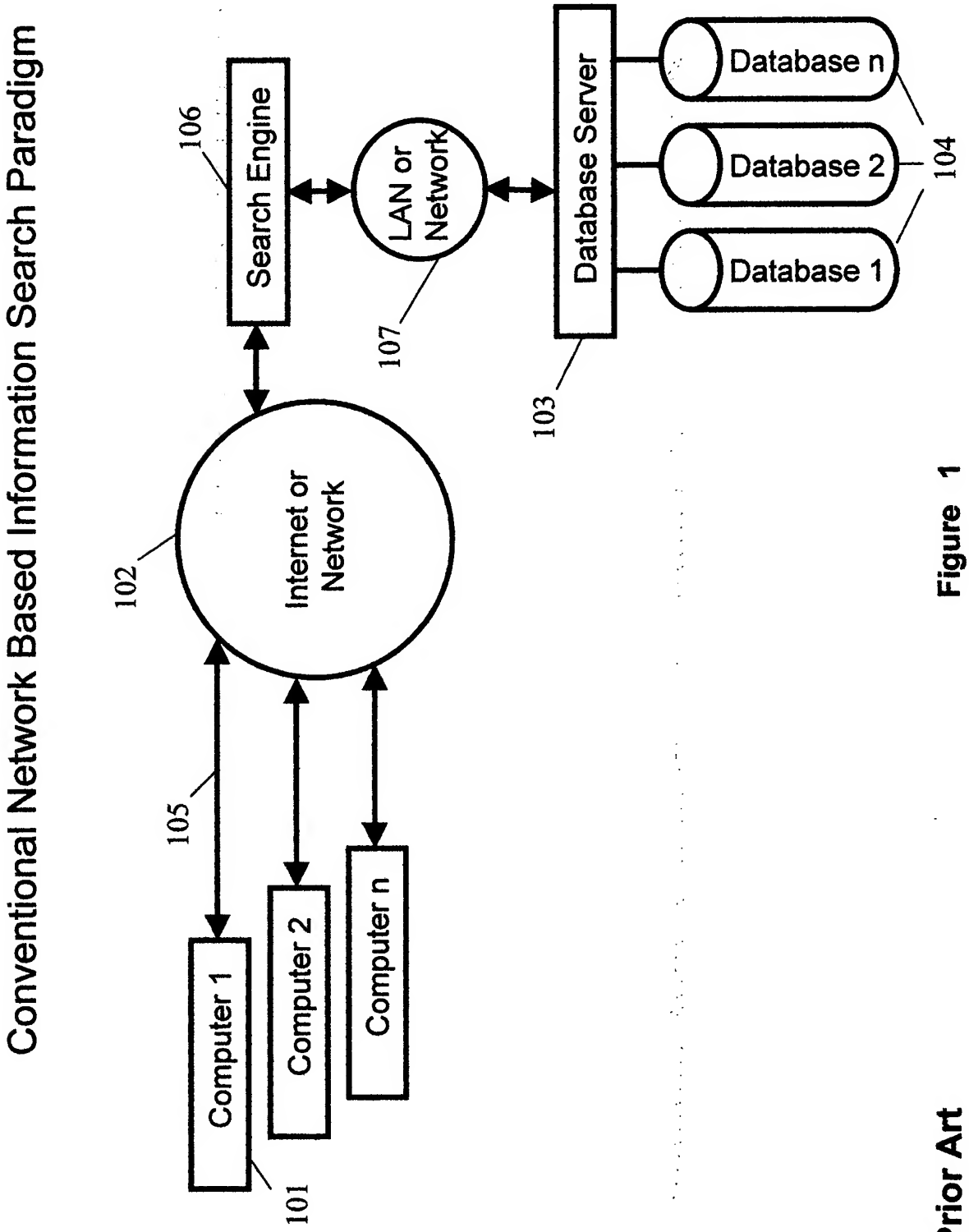
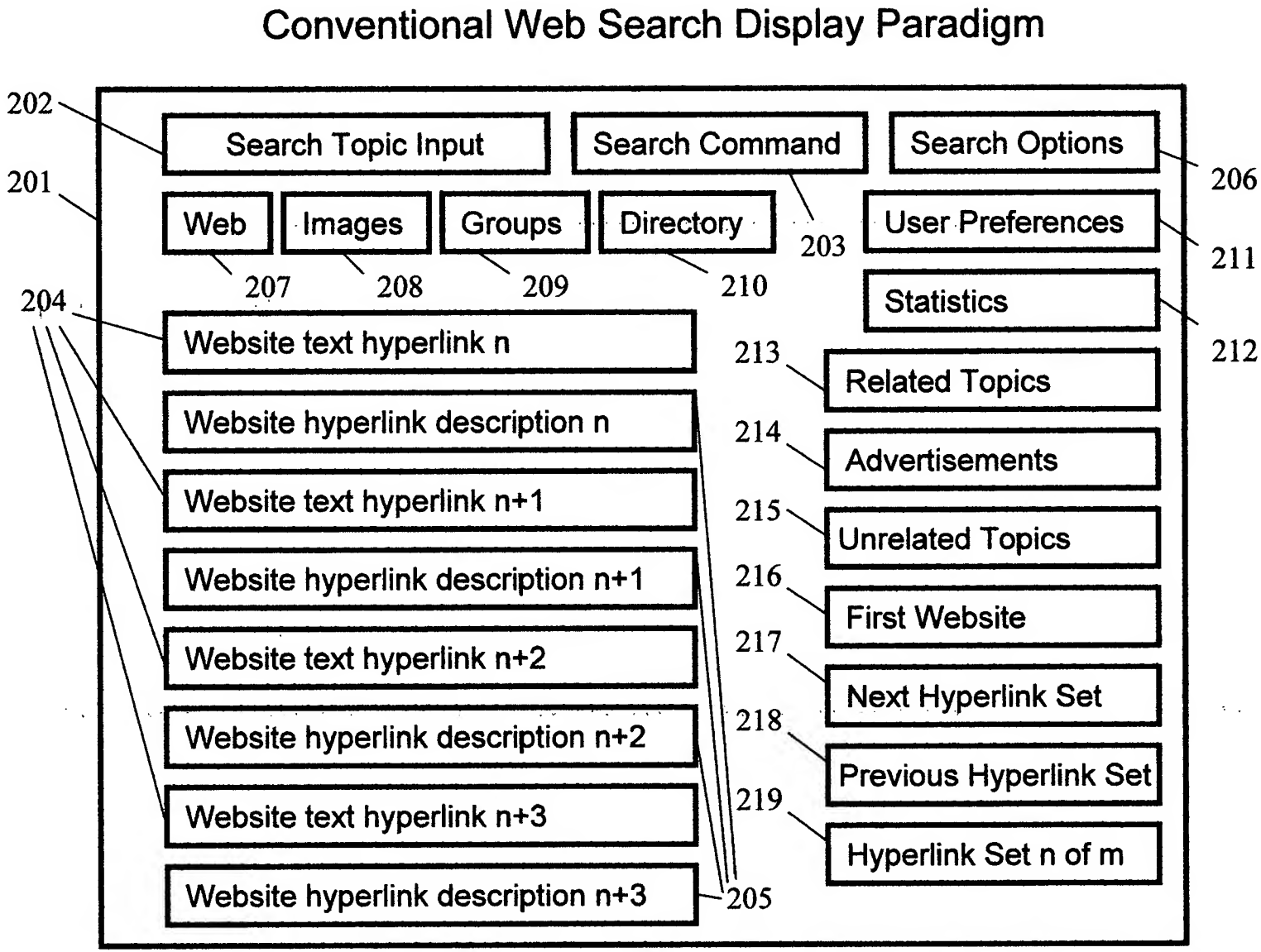


Figure 1

Prior Art

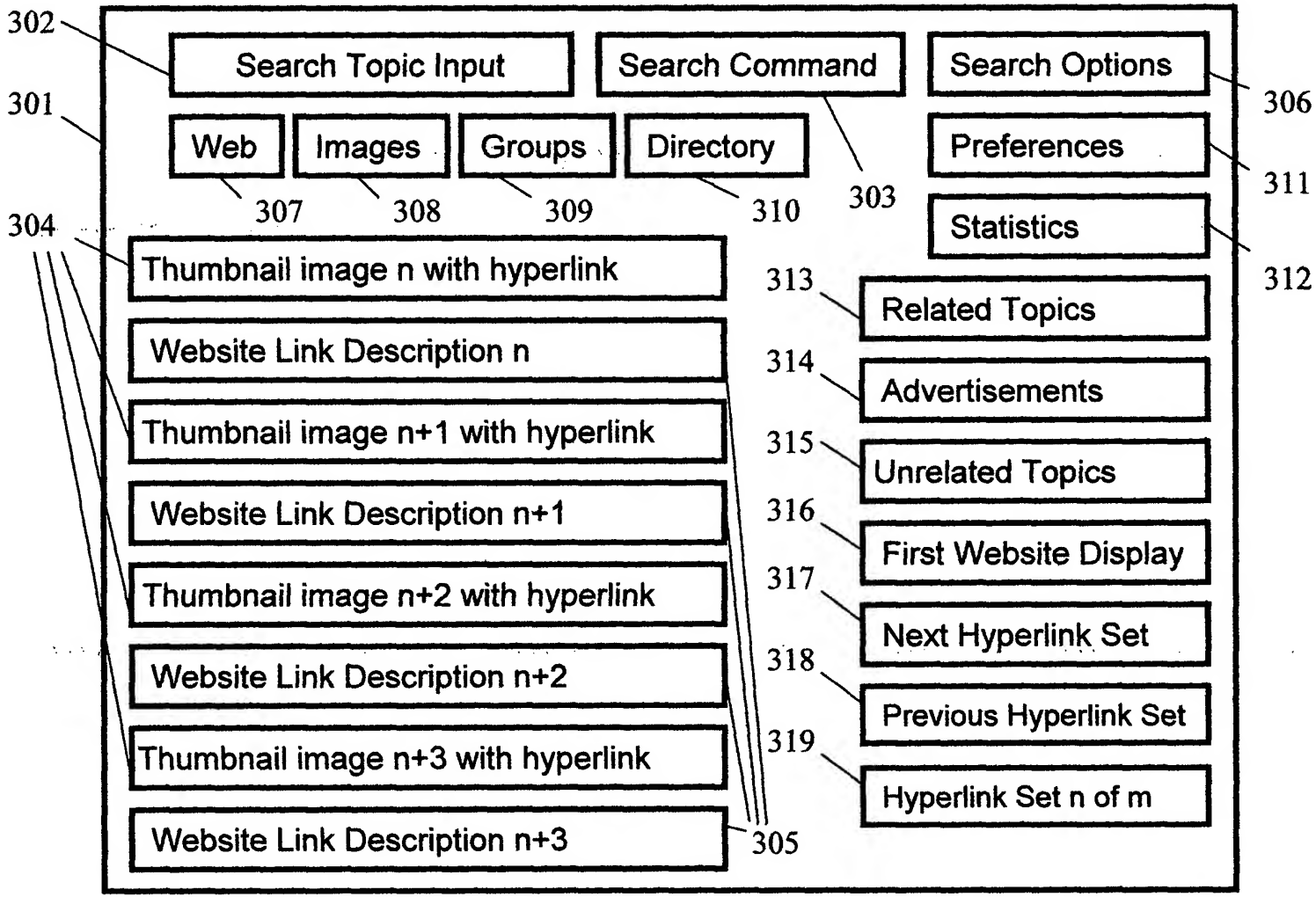


Prior Art

Figure 2

"Information Retrieval and Display System"
Alan Swahn, 95 Kara Driv , North Andover, MA 01845, 978-794-1053, alan@swahn.com

Conventional Image Search Display Paradigm



Prior Art

Figure 3

"Information Retrieval and Display Syst m"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

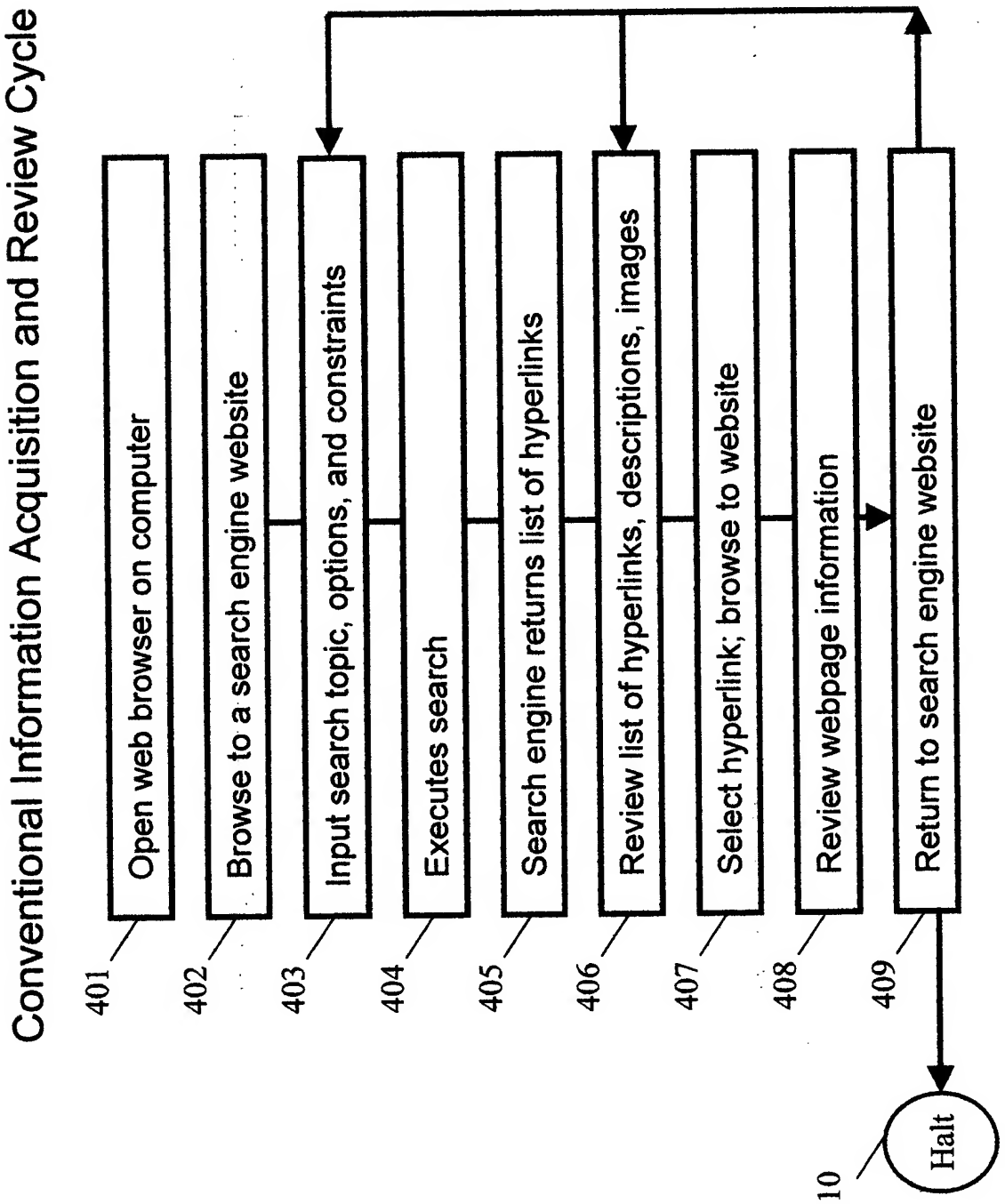
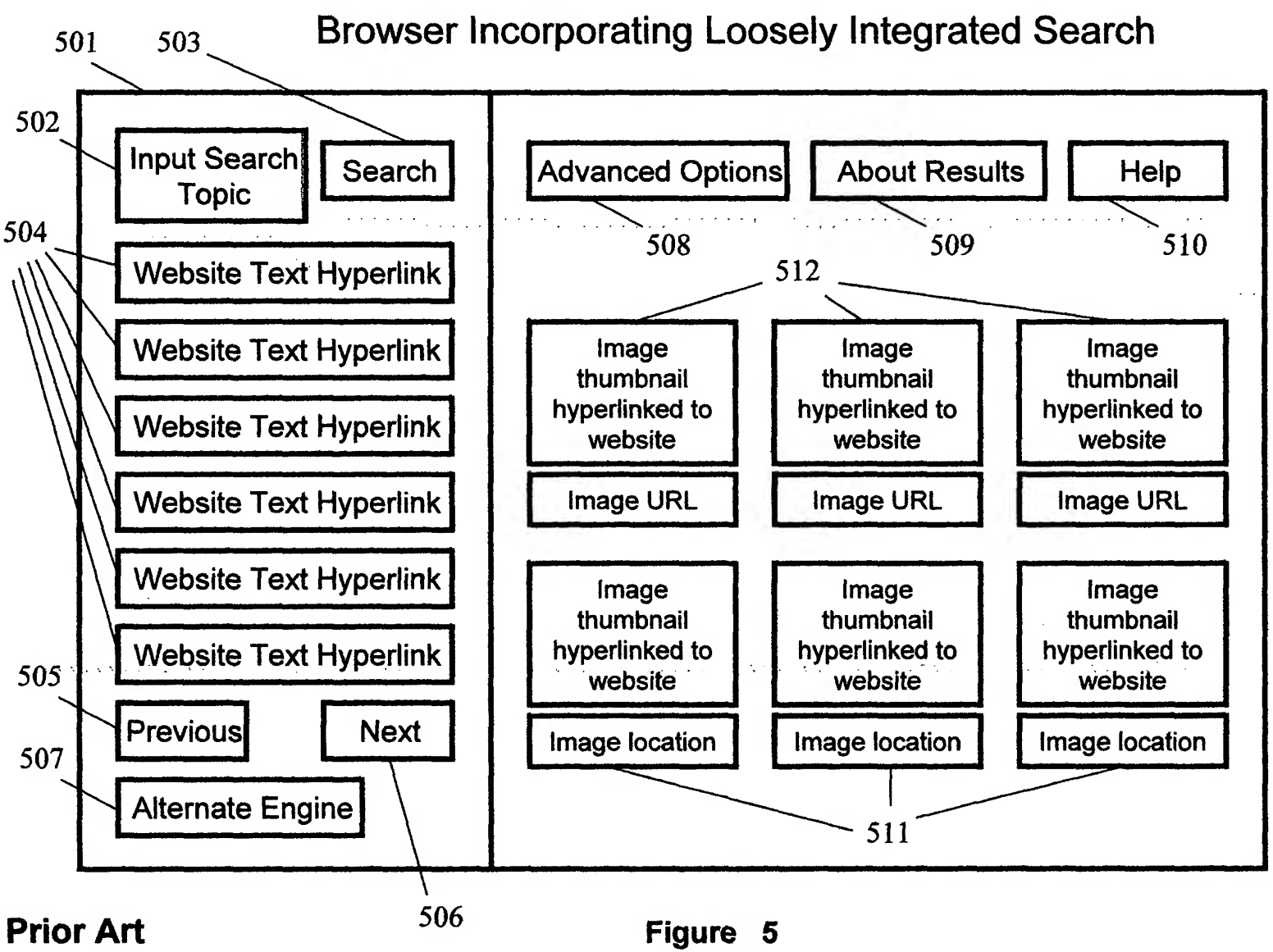


Figure 4

Prior Art



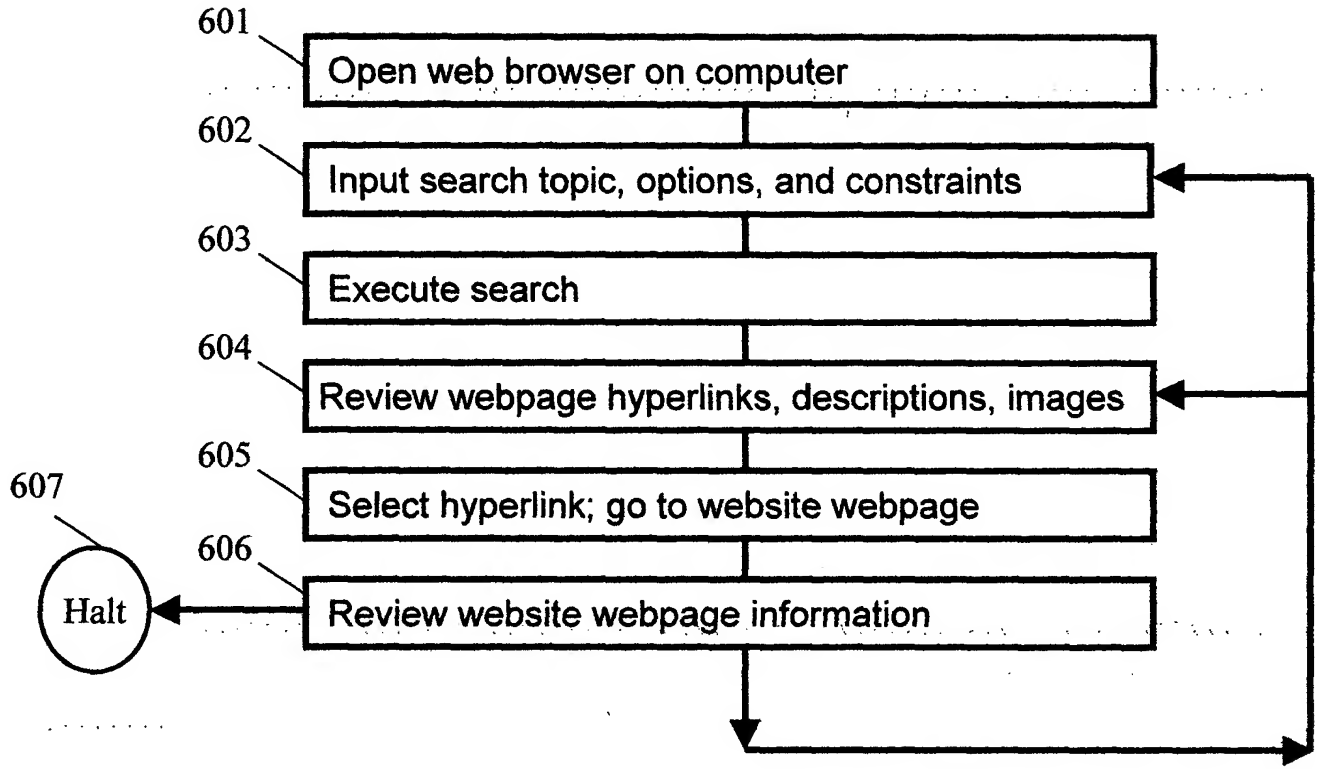
Prior Art

Figure 5

"Information Retrieval and Display System"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

"Information R trieval and Display System"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

Conventional Information Acquisition and Review Cycle for a Browser Incorporating Loosely Integrated Search



Prior Art

Figure 6

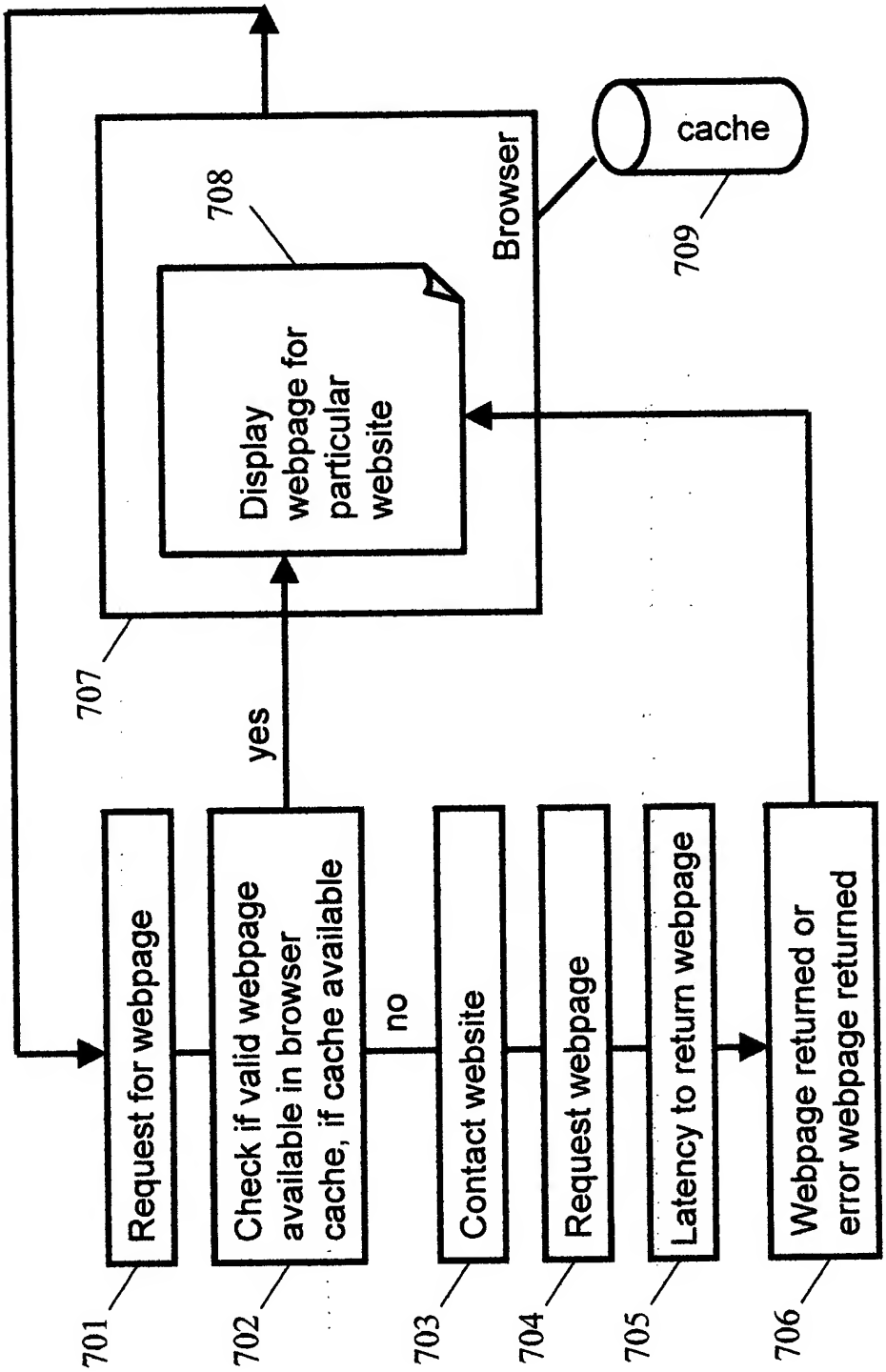


Figure 7

Prior Art

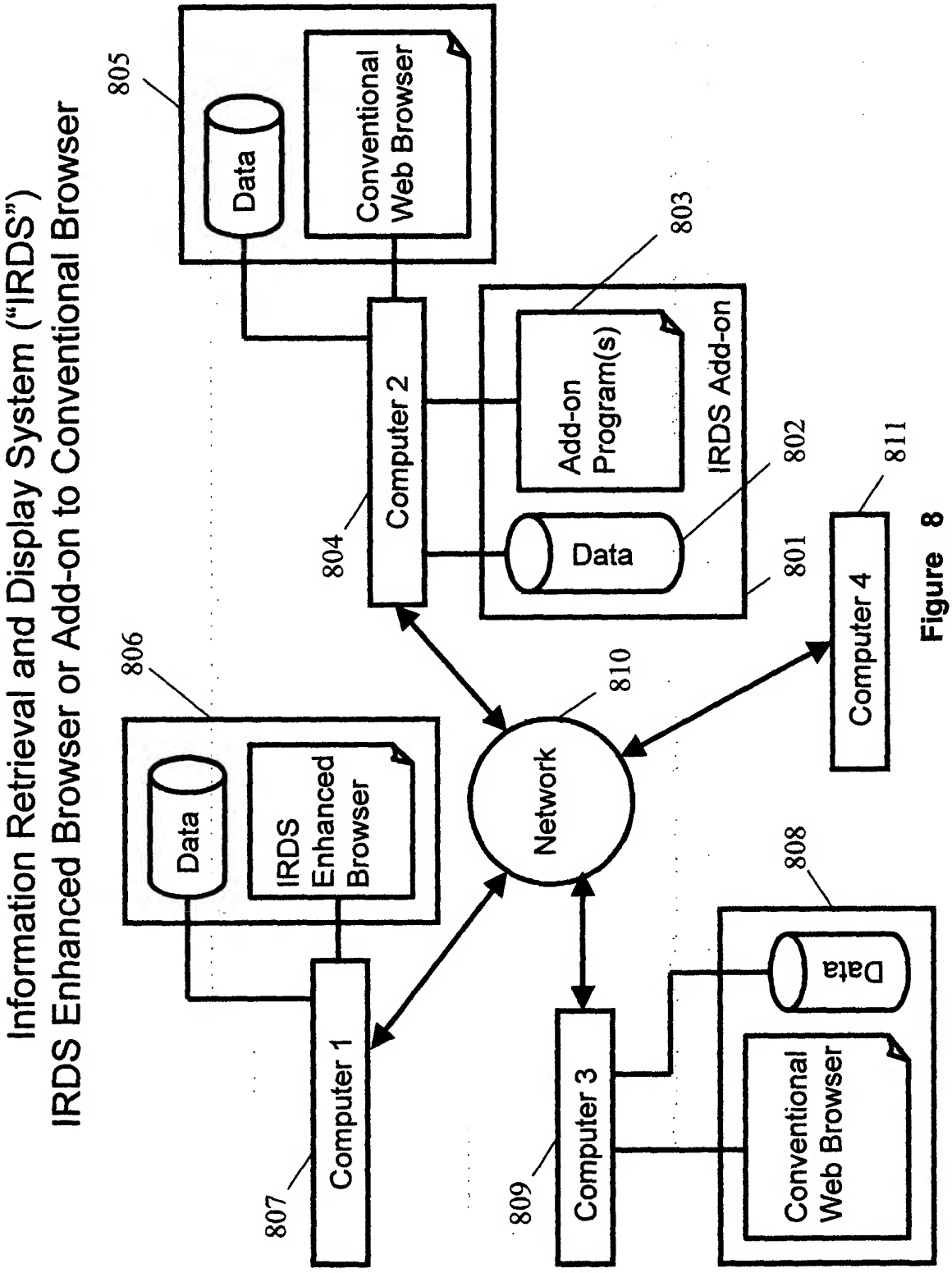

Information Retrieval and Display System ("IRDS")
IRDS Enhanced Browser or Add-on to Conventional Browser
805
Data
Conventional Web Browser
803
Add-on Program(s)
IRDS Add-on
802
Data
801
804
Computer 2
806
Data
IRDS Enhanced Browser
810
Network
811
Computer 4
808
Data
Conventional Web Browser
807
Computer 1
809
Computer 3

Figure 8

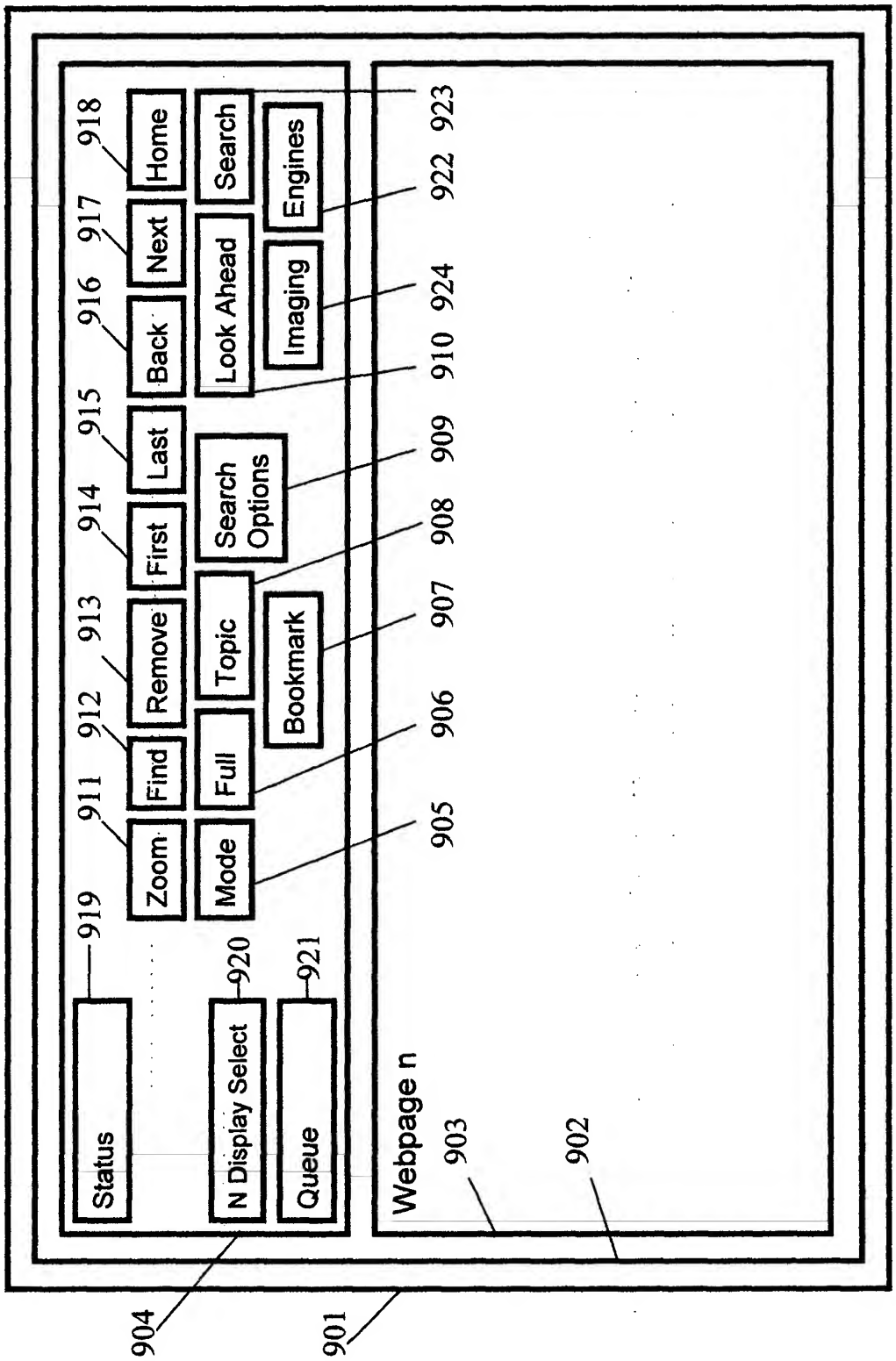

IRDS Enhanced Browser Single Webpage Display
Status
N Display Select
Queue
Zoom
Find
Remove
First
Last
Mode
Full
Topic
Search Options
Bookmark
Back
Next
Home
Look Ahead
Imaging
Engines
Search
Webpage n
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924

Figure 9

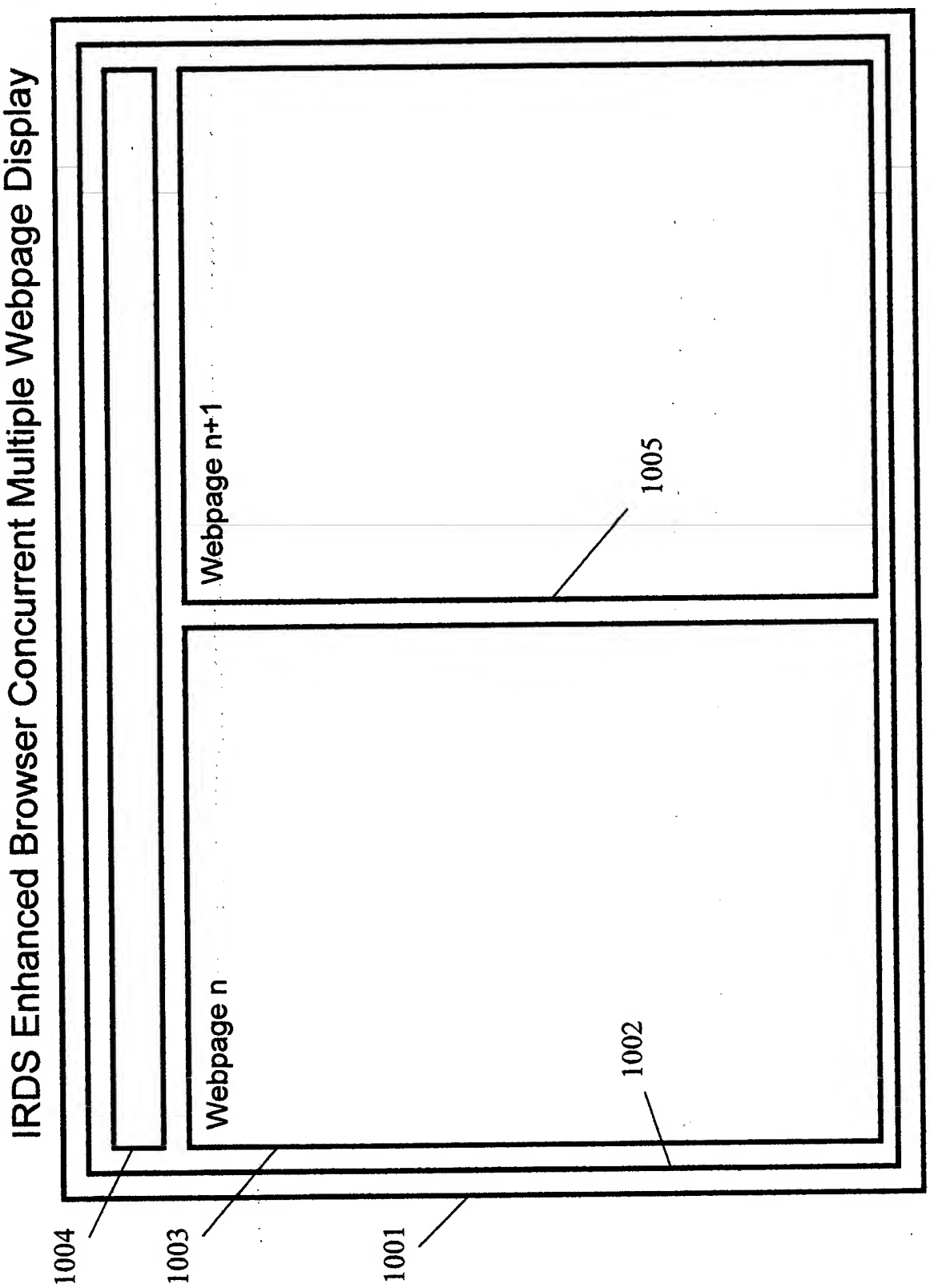

IRDS Enhanced Browser Concurrent Multiple Webpage Display
Webpage n+1
Webpage n
1005
1002
1004
1003
1001

Figure 10

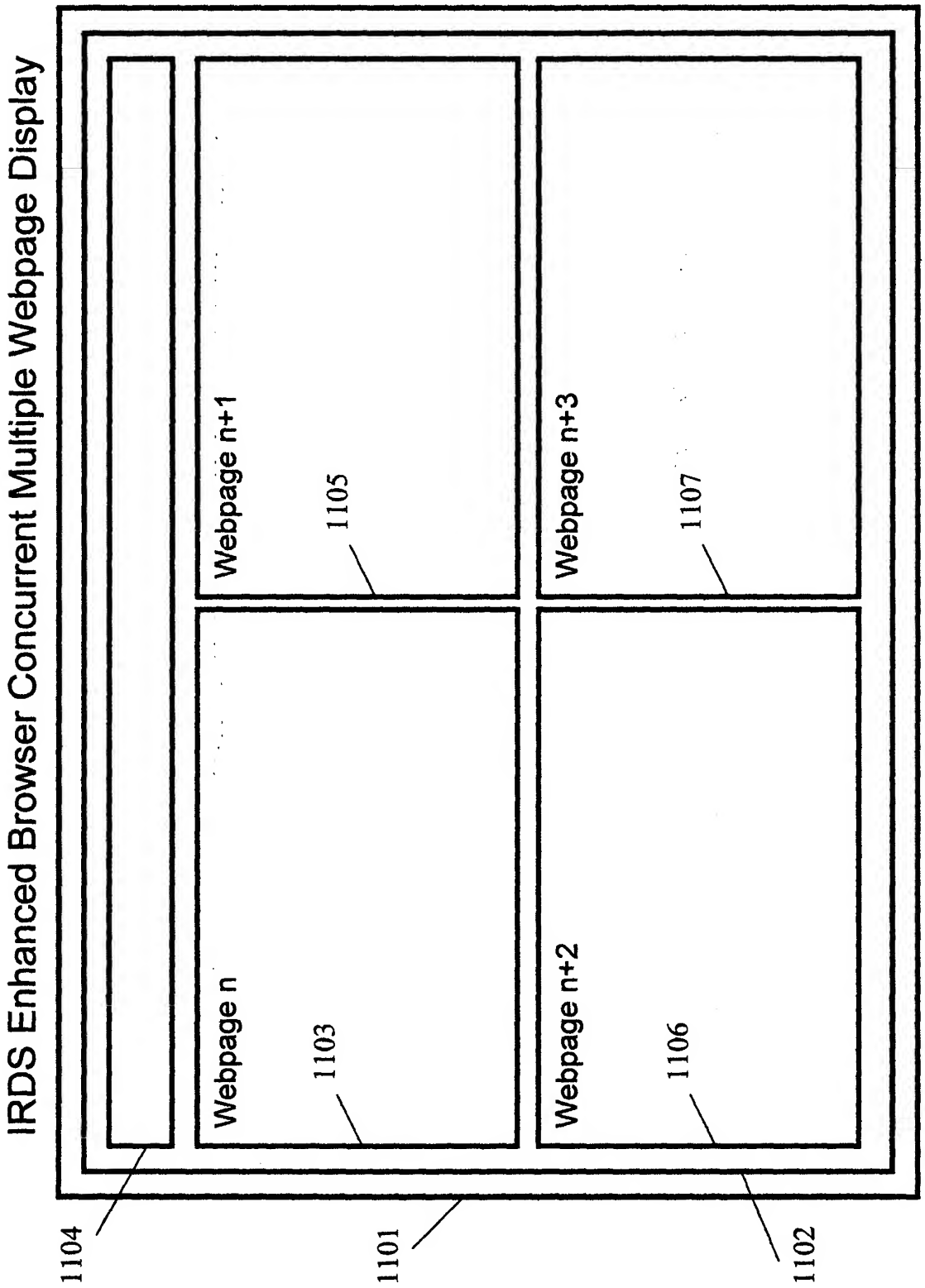

IRDS Enhanced Browser Concurrent Multiple Webpage Display
Webpage n+1
1105
Webpage n+3
1107
Webpage n
1103
Webpage n+2
1106
1104
1101
1102

Figure 11

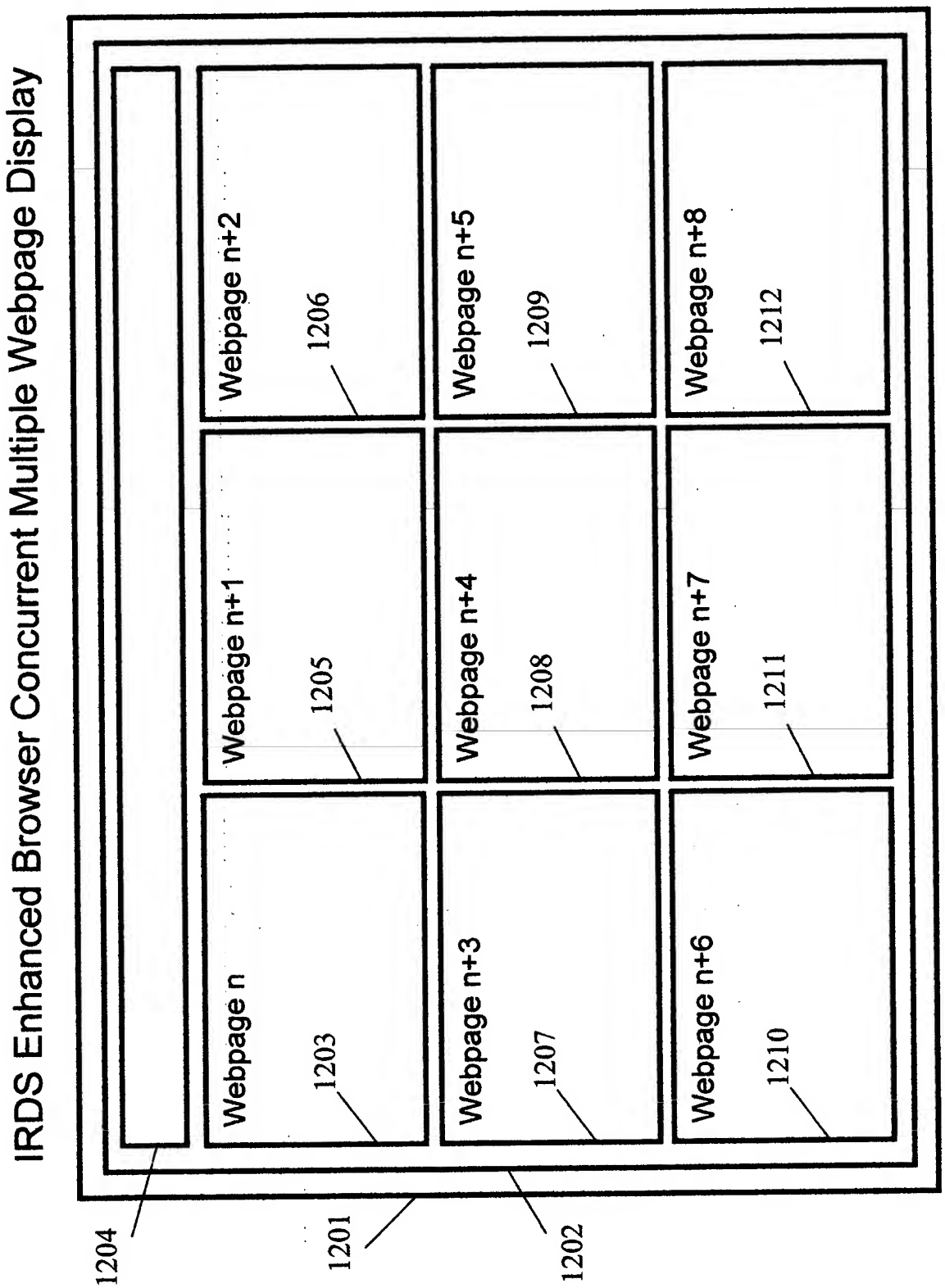

IRDS Enhanced Browser Concurrent Multiple Webpage Display
Webpage n
1203
Webpage n+1
1205
Webpage n+2
1206
Webpage n+3
1207
Webpage n+4
1208
Webpage n+5
1209
Webpage n+6
1210
Webpage n+7
1211
Webpage n+8
1212
1204
1201
1202

Figure 12

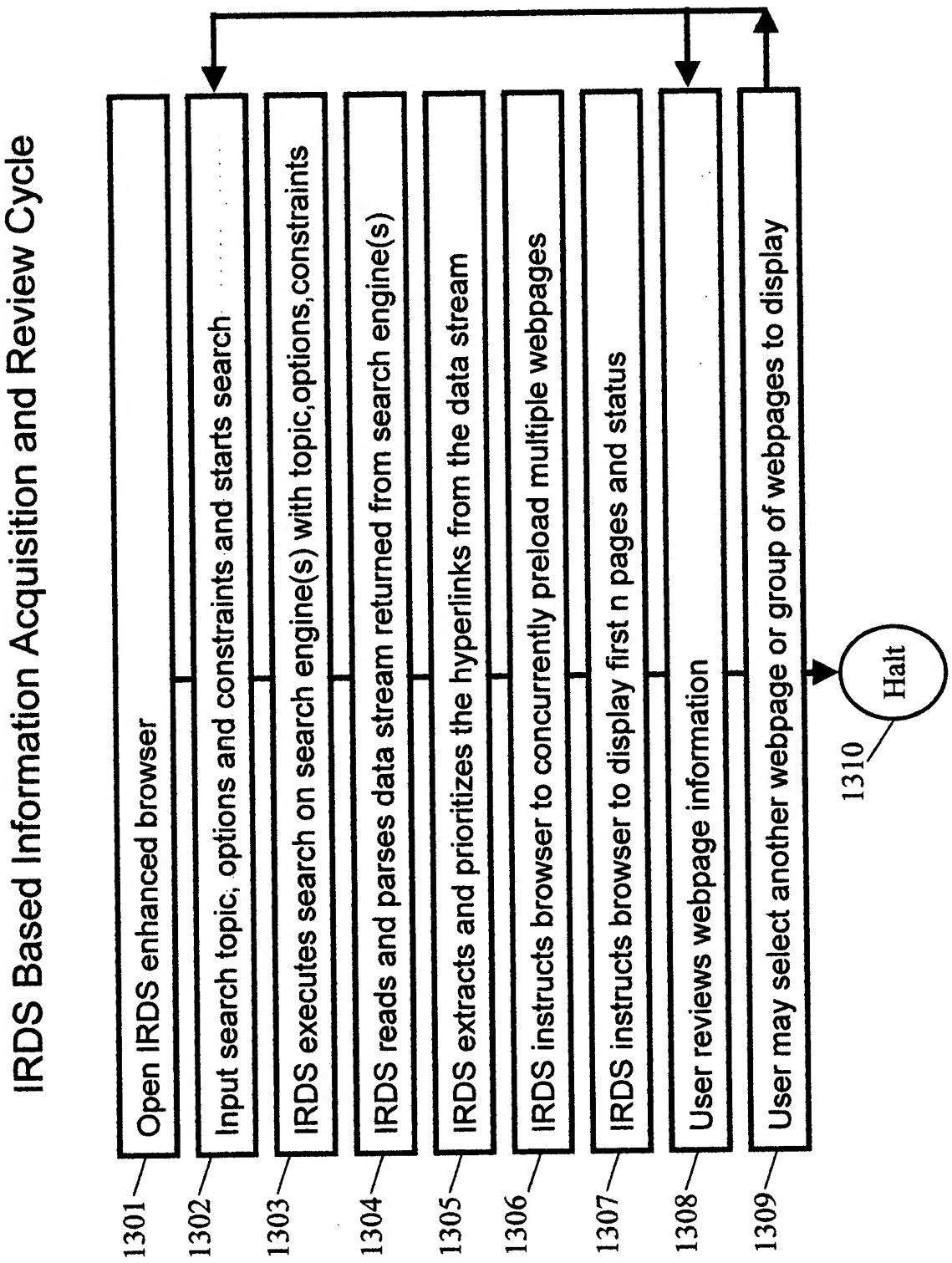

IRDS Based Information Acquisition and Review Cycle
Open IRDS enhanced browser
Input search topic, options and constraints and starts search
IRDS executes search on search engine(s) with topic,options,constraints
IRDS reads and parses data stream returned from search engine(s)
IRDS extracts and prioritizes the hyperlinks from the data stream
IRDS instructs browser to concurrently preload multiple webpages
IRDS instructs browser to display first n pages and status
User reviews webpage information
User may select another webpage or group of webpages to display
Halt
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310

Figure 13

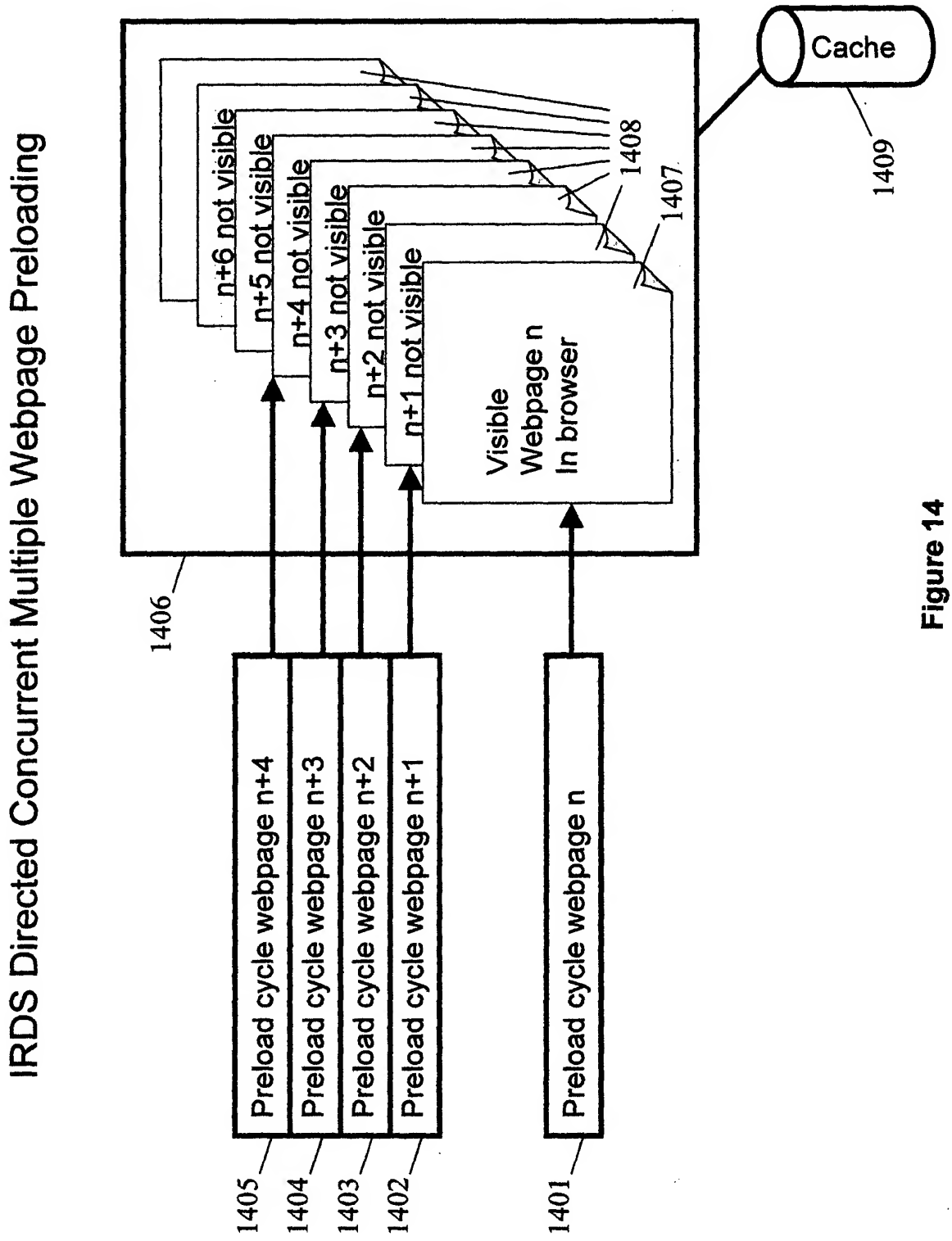

IRDS Directed Concurrent Multiple Webpage Preloading
Cache
1409
1408
1407
n+6 not visible
n+5 not visible
n+4 not visible
n+3 not visible
n+2 not visible
n+1 not visible
Visible
Webpage n
In browser
1406
Preload cycle webpage n+4
Preload cycle webpage n+3
Preload cycle webpage n+2
Preload cycle webpage n+1
Preload cycle webpage n
1405
1404
1403
1402
1401

Figure 14

IRDS Directed Next-In-Queue Webpage Preloading

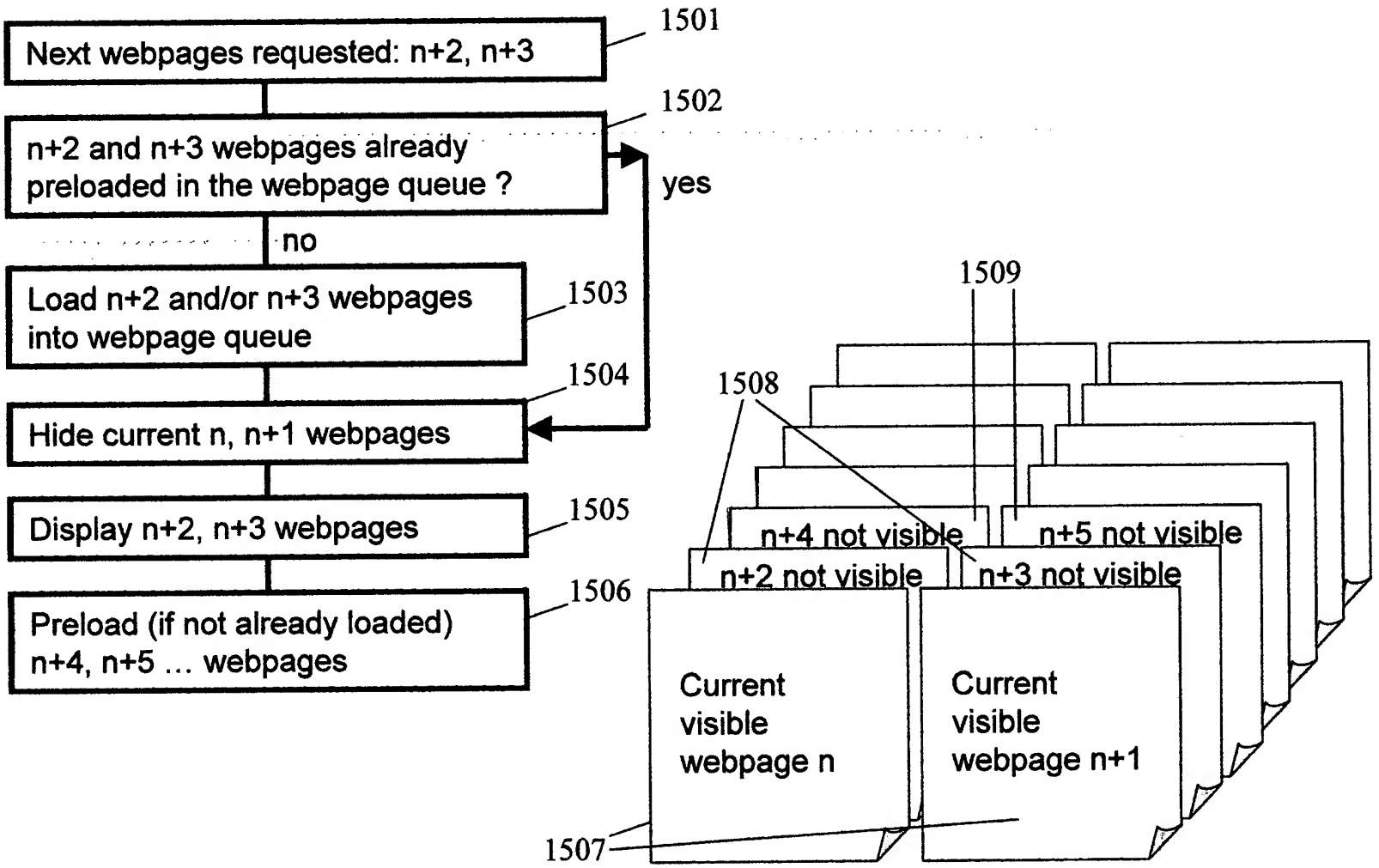


Figure 15

"Information Retrieval and Display System"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

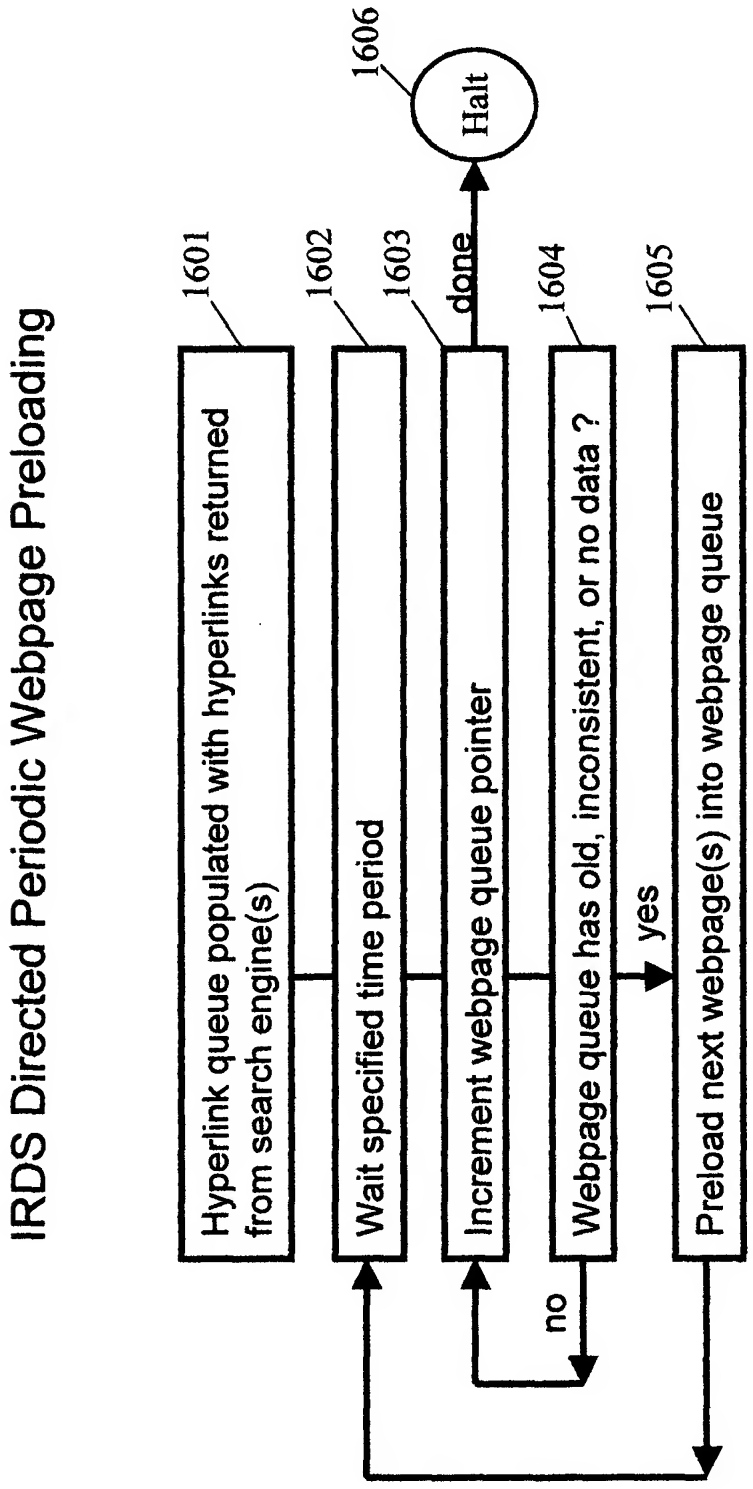

IRDS Directed Periodic Webpage Preloading
1601
Hyperlink queue populated with hyperlinks returned from search engine(s)
1602
Wait specified time period
1603
Increment webpage queue pointer
done
1606
Halt
1604
Webpage queue has old, inconsistent, or no data ?
no
yes
1605
Preload next webpage(s) into webpage queue

Figure 16

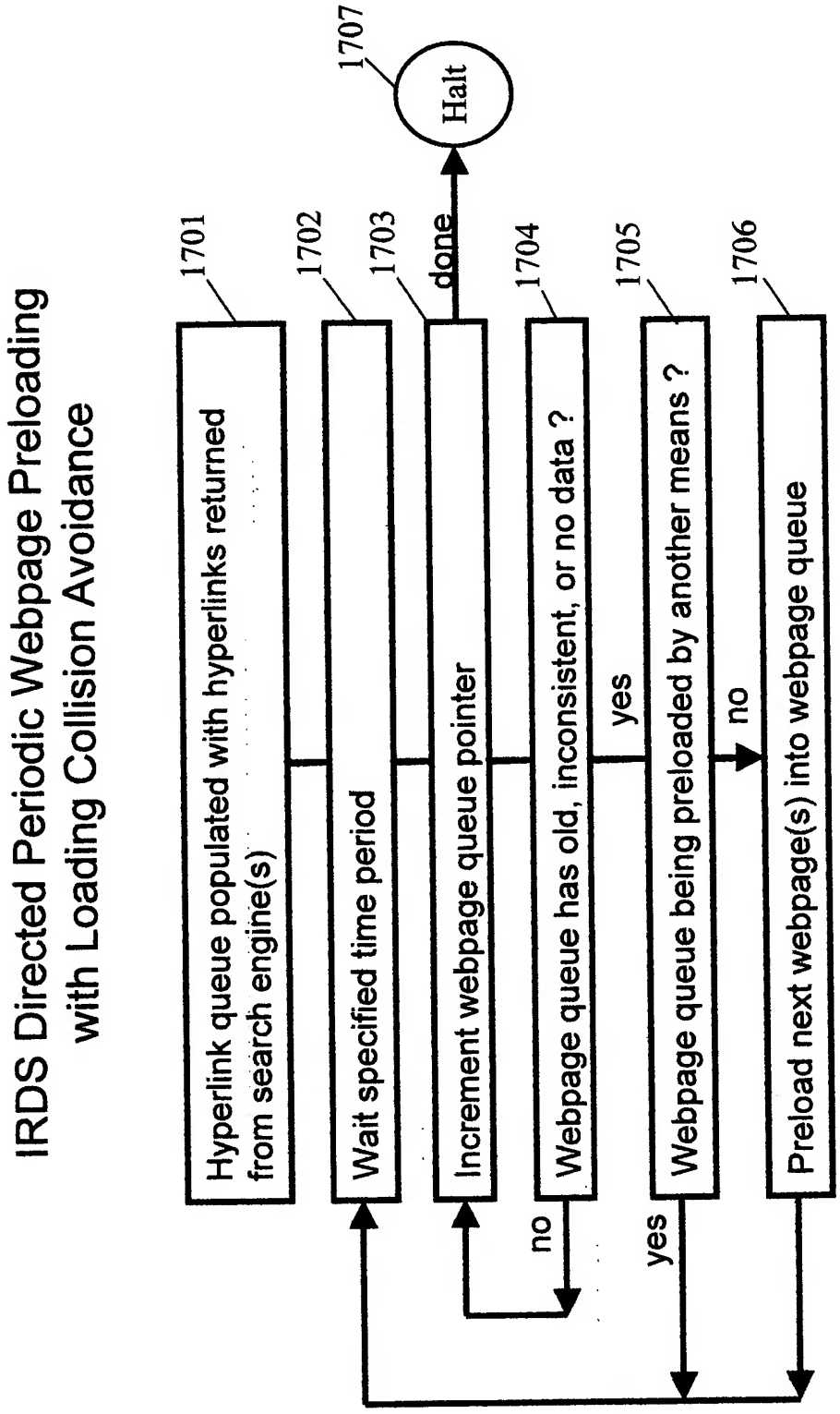

IRDS Directed Periodic Webpage Preloading with Loading Collision Avoidance
1701
Hyperlink queue populated with hyperlinks returned from search engine(s)
1702
Wait specified time period
1703
Increment webpage queue pointer
done
1707
Halt
1704
Webpage queue has old, inconsistent, or no data ?
no
yes
1705
Webpage queue being preloaded by another means ?
yes
no
1706
Preload next webpage(s) into webpage queue

Figure 17

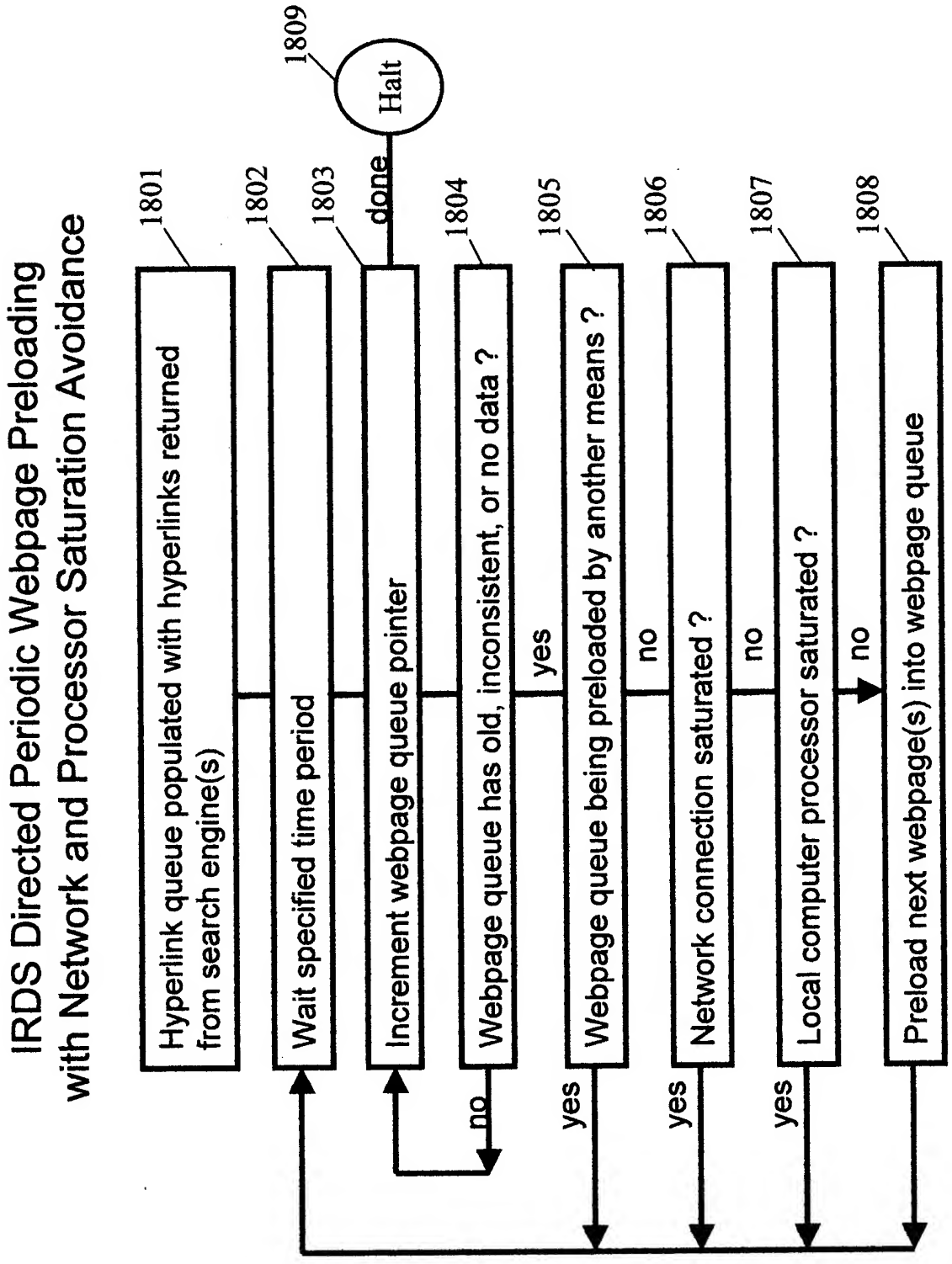

IRDS Directed Periodic Webpage Preloading
with Network and Processor Saturation Avoidance
1801
Hyperlink queue populated with hyperlinks returned from search engine(s)
1802
Wait specified time period
1803
Increment webpage queue pointer
done
1809
Halt
1804
Webpage queue has old, inconsistent, or no data ?
no
yes
1805
Webpage queue being preloaded by another means ?
yes
no
1806
Network connection saturated ?
yes
no
1807
Local computer processor saturated ?
yes
no
1808
Preload next webpage(s) into webpage queue

Figure 18

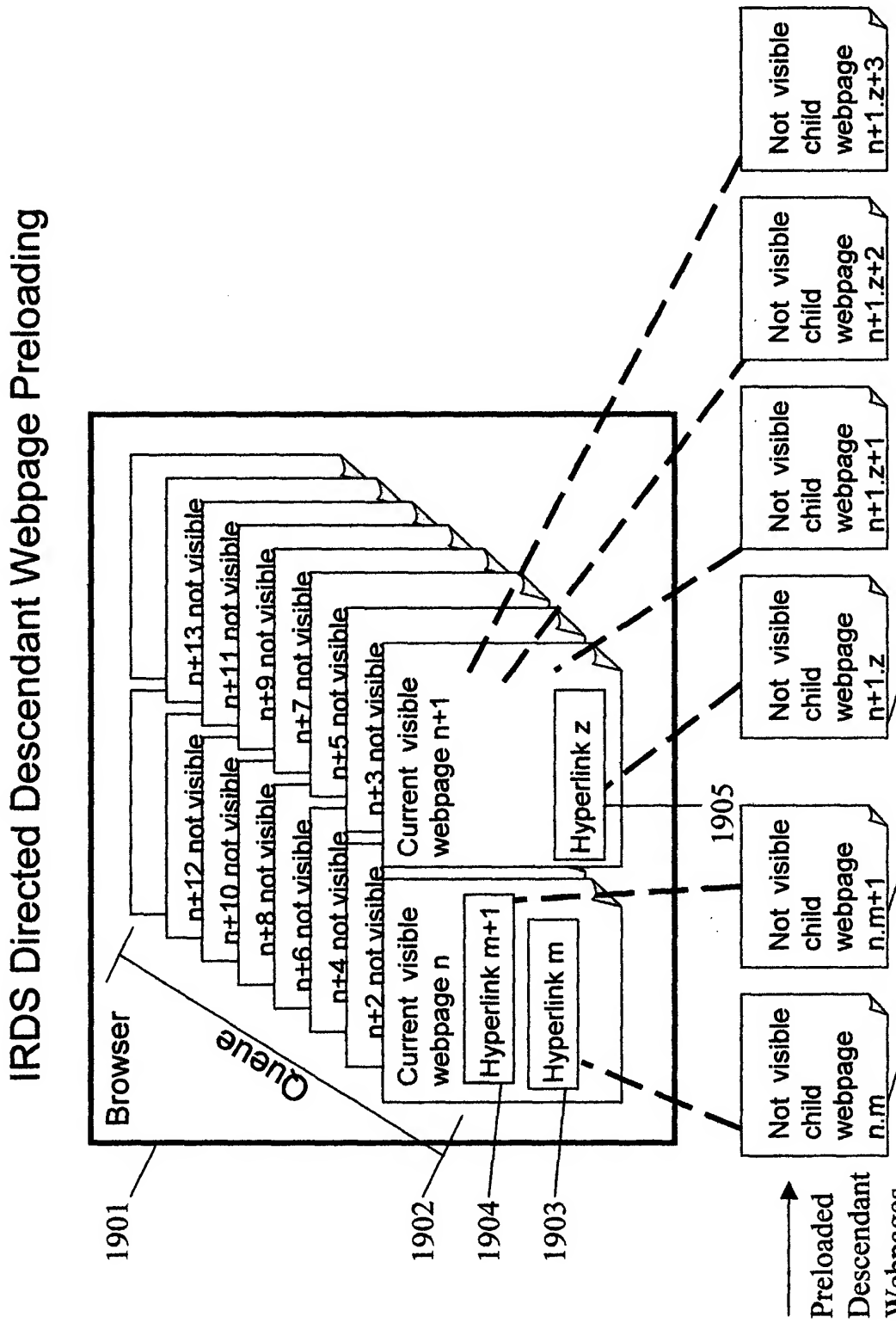

IRDS Directed Descendant Webpage Preloading
Browser
Queue
n+13 not visible
n+12 not visible
n+11 not visible
n+10 not visible
n+9 not visible
n+8 not visible
n+7 not visible
n+6 not visible
n+5 not visible
n+4 not visible
n+3 not visible
n+2 not visible
Current visible webpage n+1
Current visible webpage n
Hyperlink z
Hyperlink m+1
Hyperlink m
Not visible child webpage n+1.z+3
Not visible child webpage n+1.z+2
Not visible child webpage n+1.z+1
Not visible child webpage n+1.z
Not visible child webpage n.m+1
Not visible child webpage n.m
1901
1902
1904
1903
1905
1908
1907
1906
Preloaded Descendant Webpages

Figure 19

IRDS Enhanced Browser Set Number of Pages to Display Function

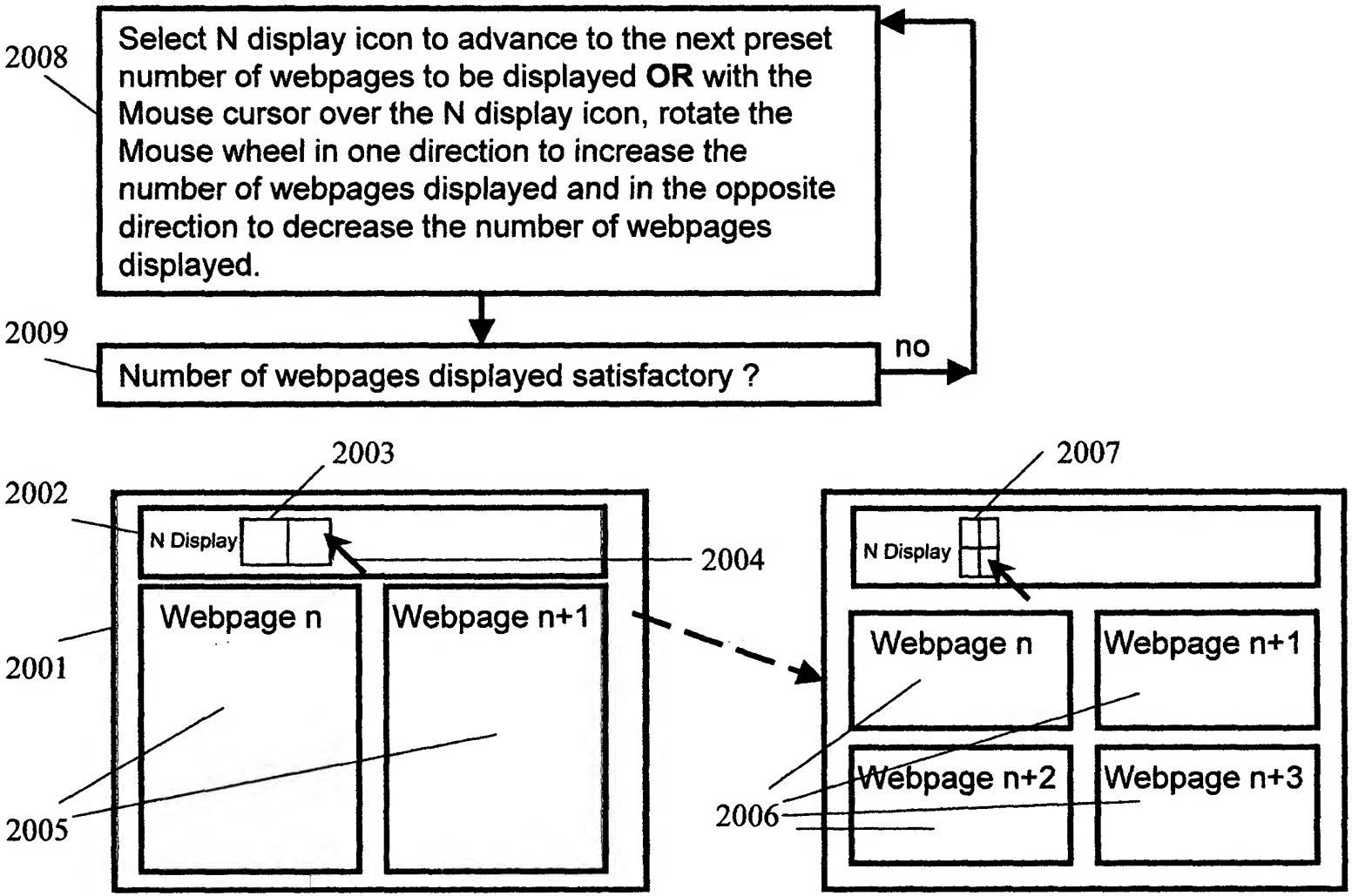


Figure 20

"Information R trieval and Display Syst m"
Alan Swahn, 95 Kara Drive, North Andov r, MA 01845, 978-794-1053, alan@swahn.com

IRDS Enhanced Browser Zoom Webpage Function

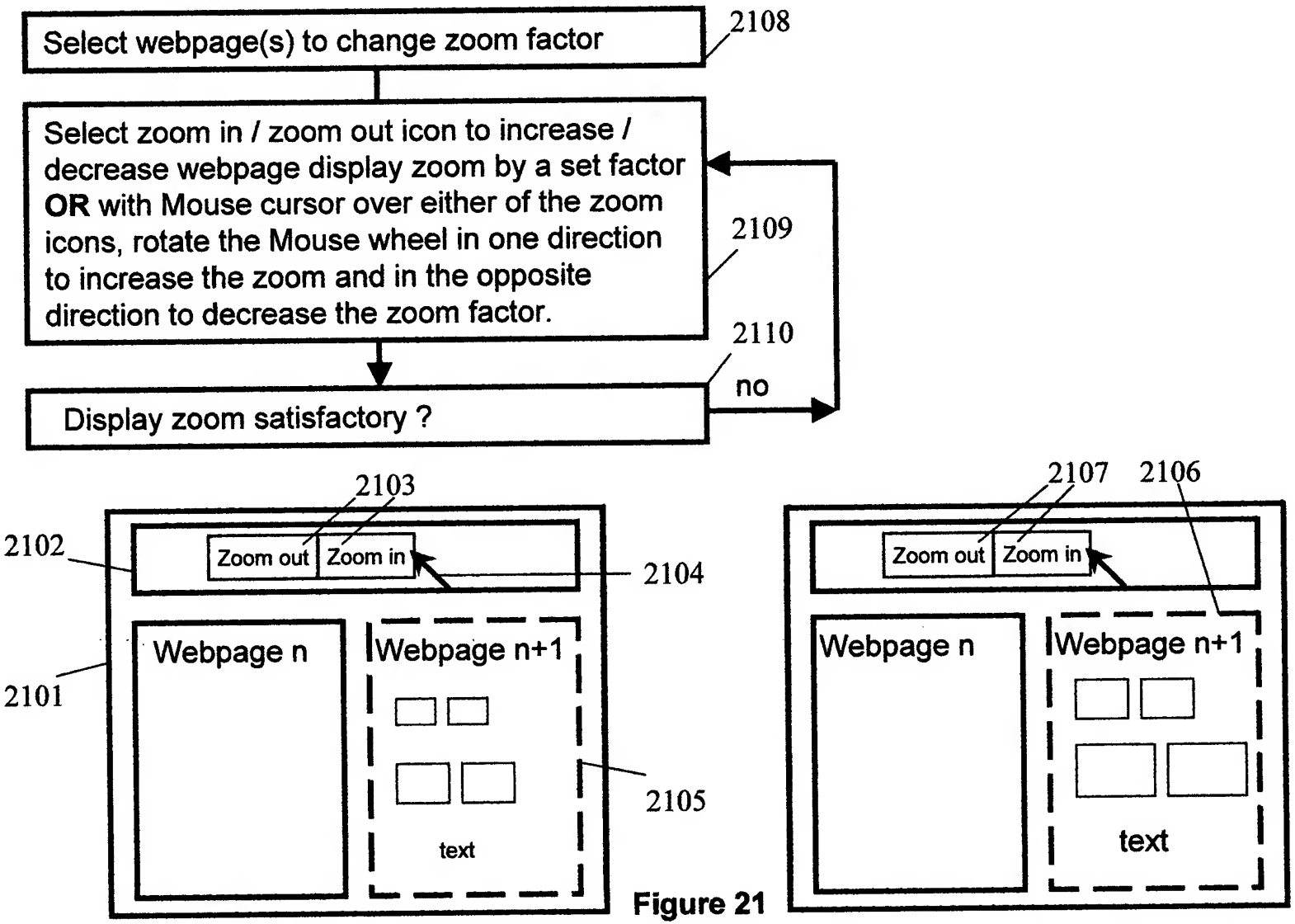


Figure 21

"Information Retrieval and Display System"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

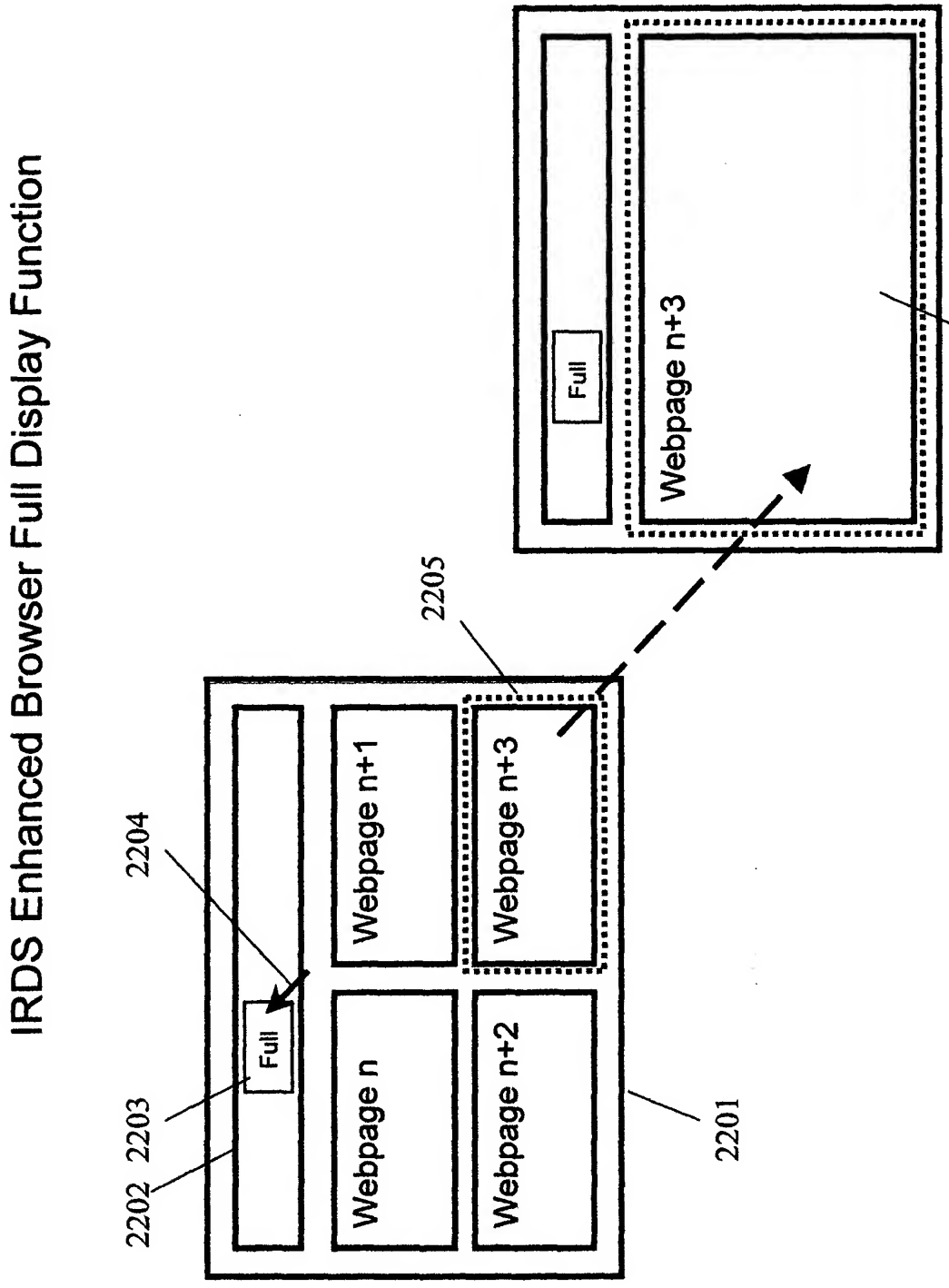

IRDS Enhanced Browser Full Display Function
Full
Webpage n
Webpage n+2
Webpage n+1
Webpage n+3
Full
Webpage n+3
2201
2202
2203
2204
2205
2206

Figure 22

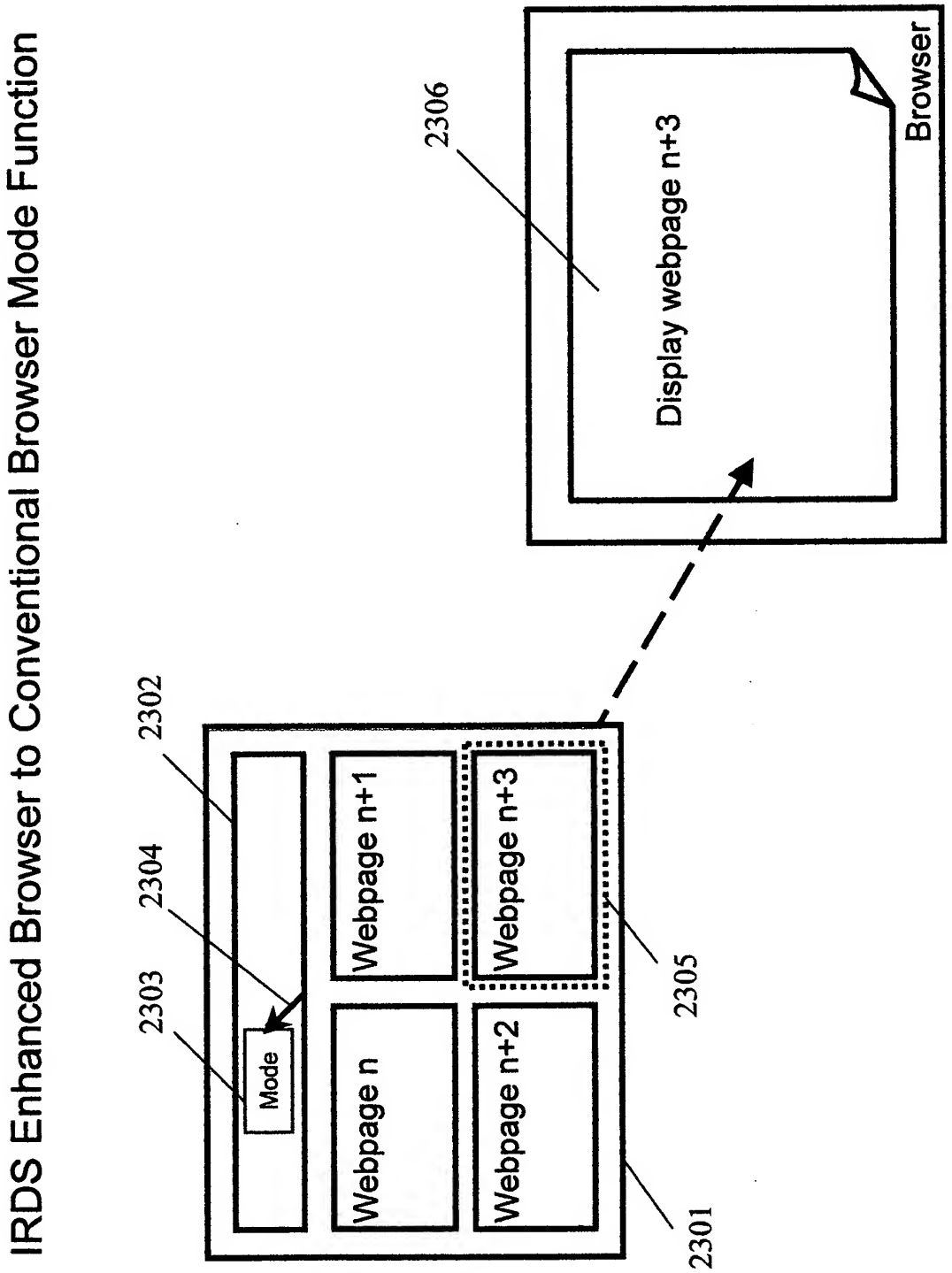

IRDS Enhanced Browser to Conventional Browser Mode Function
2302
2304
2303
Mode
Webpage n
Webpage n+1
Webpage n+2
Webpage n+3
2305
2301
2306
Display webpage n+3
Browser

Figure 23

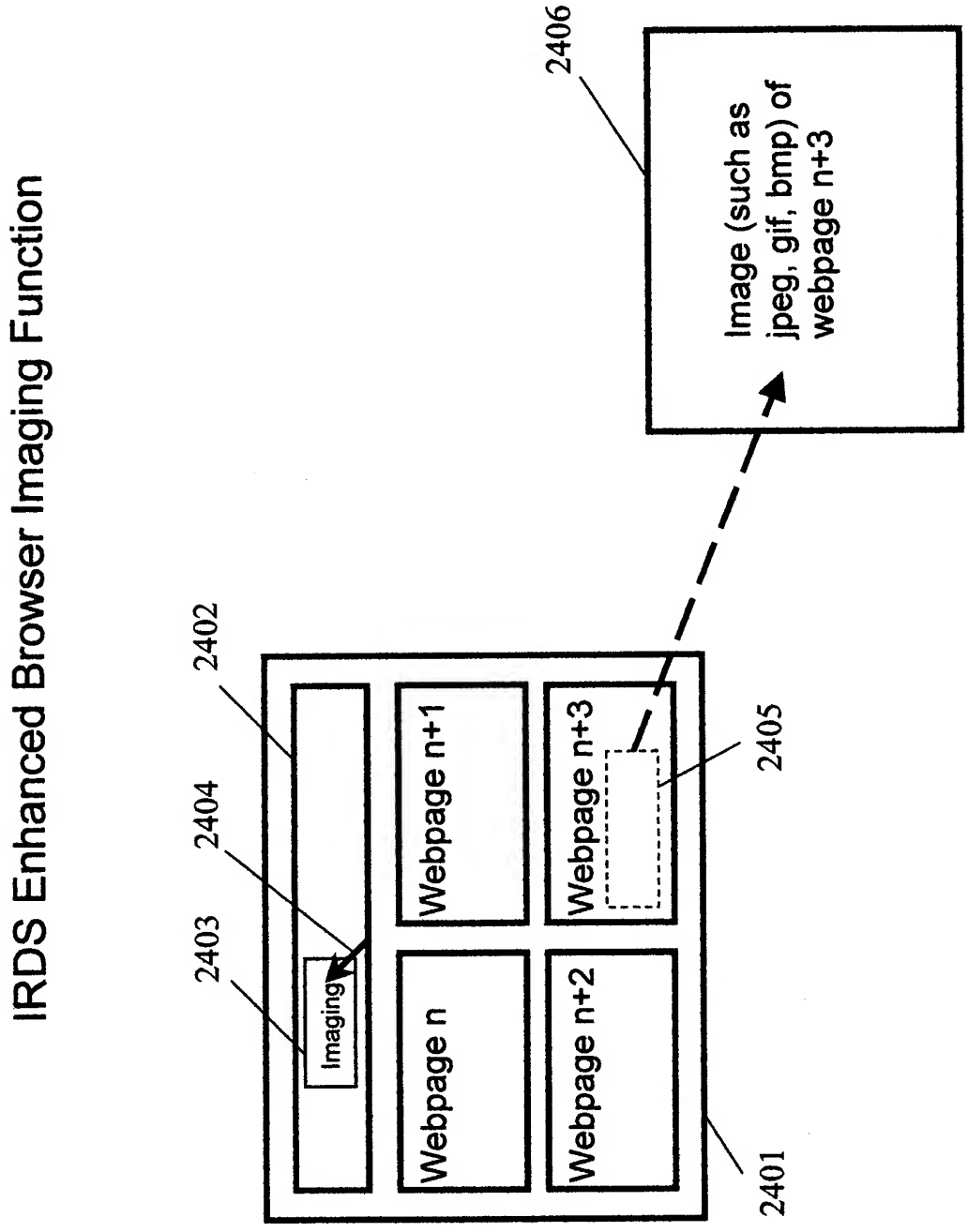

IRDS Enhanced Browser Imaging Function
2406
Image (such as jpeg, gif, bmp) of webpage n+3
2402
2404
2403
Imaging
Webpage n
Webpage n+1
Webpage n+2
Webpage n+3
2405
2401

Figure 24

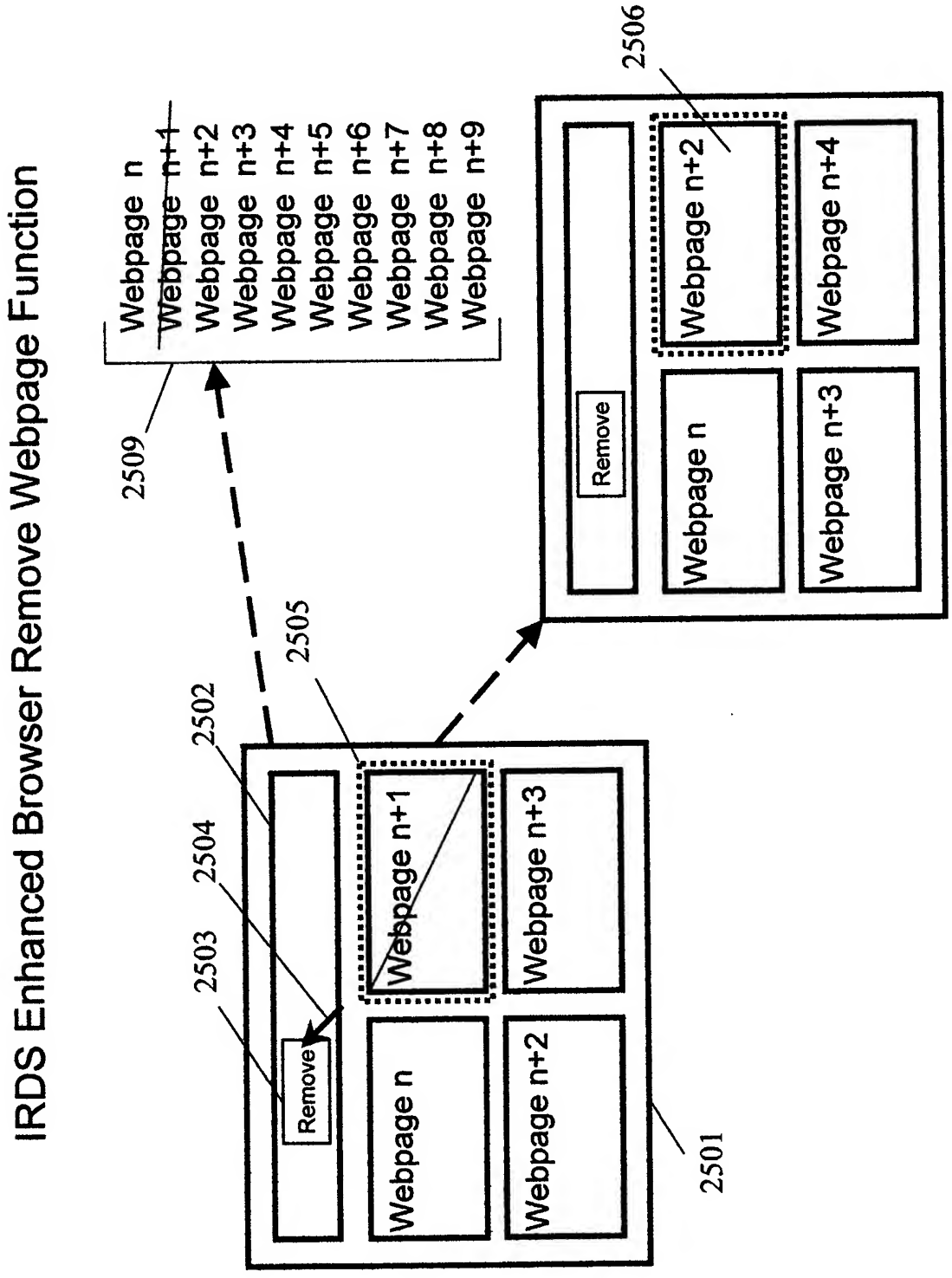

IRDS Enhanced Browser Remove Webpage Function
2501
2502
2503
2504
2505
2506
2509
Remove
Webpage n
Webpage n+1
Webpage n+2
Webpage n+3
Webpage n+4
Webpage n
Webpage n+1
Webpage n+2
Webpage n+3
Webpage n+4
Webpage n+5
Webpage n+6
Webpage n+7
Webpage n+8
Webpage n+9

Figure 25

IRDS Enhanced Browser Bookmark Function

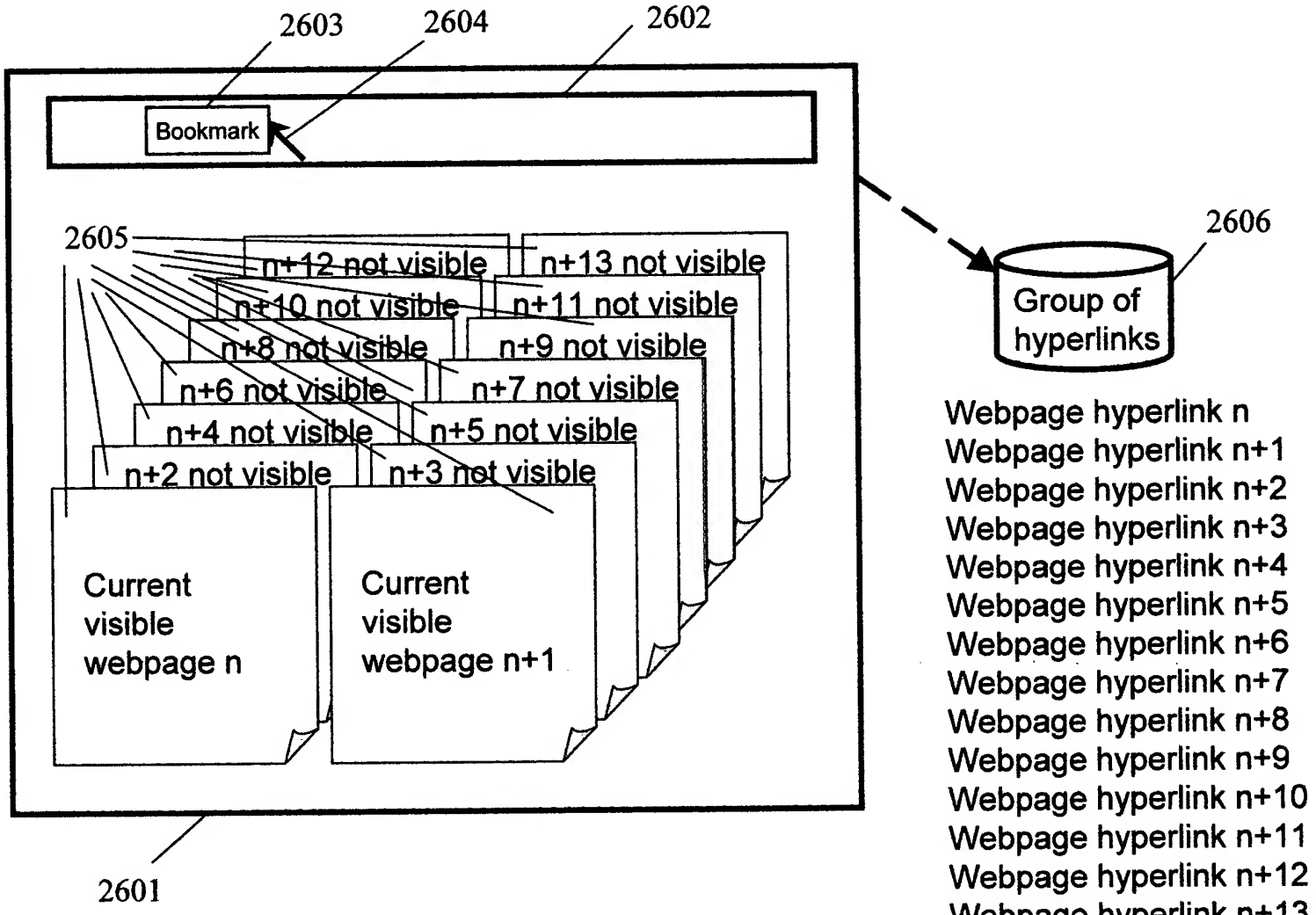


Figure 26

"Information Retrieval and Display System"
Alan Swahn, 95 Kara Drive, North Andover, MA 01845, 978-794-1053, alan@swahn.com

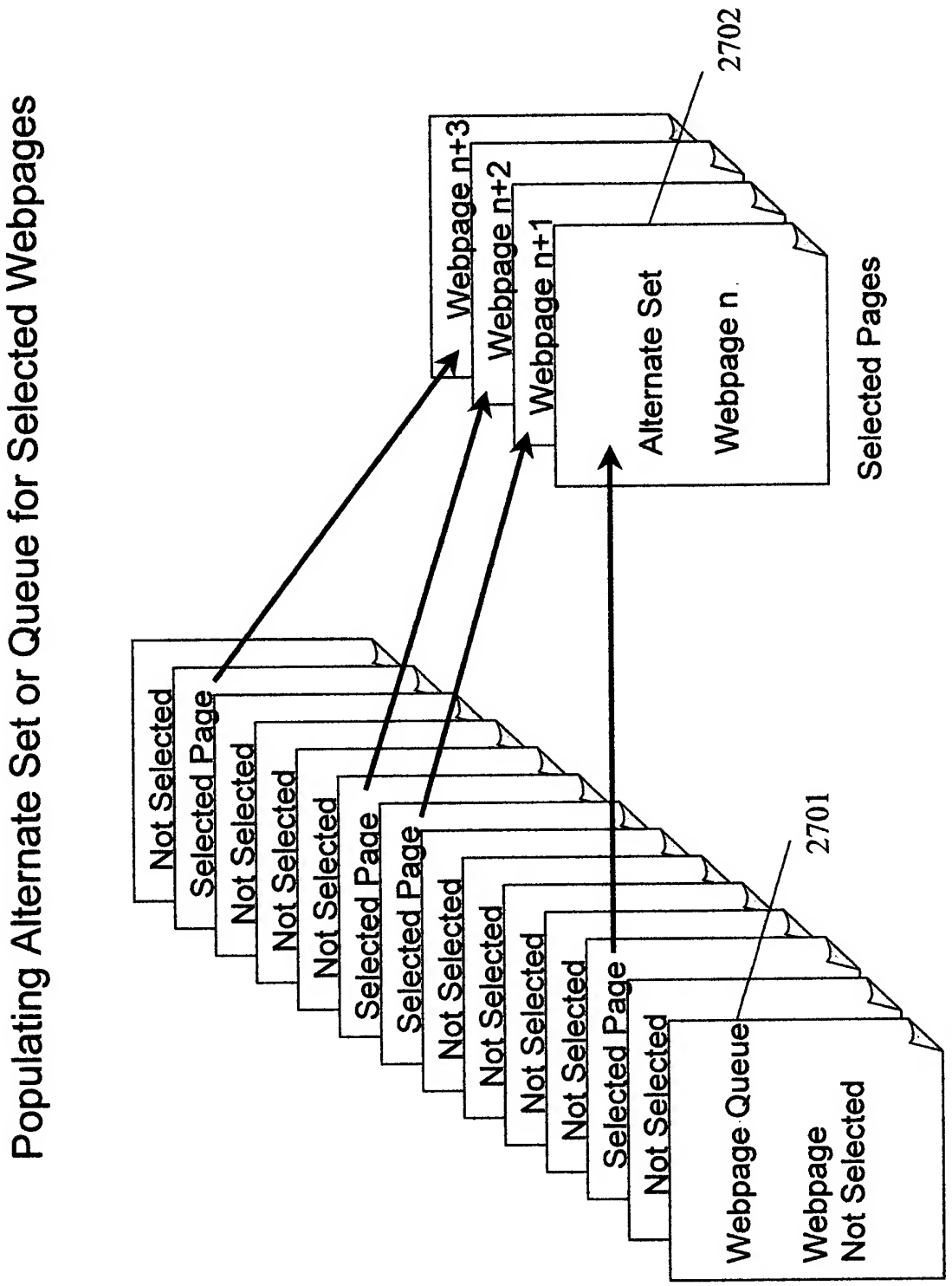

Populating Alternate Set or Queue for Selected Webpages
Webpage Queue
Webpage Not Selected
Not Selected
Selected Page
Not Selected
Not Selected
Not Selected
Selected Page
Selected Page
Not Selected
Not Selected
Not Selected
Not Selected
Selected Page
Not Selected
2701
Alternate Set
Webpage n
Webpage n+1
Webpage n+2
Webpage n+3
Selected Pages
2702

Figure 27